

AMENDMENTS TO THE CLAIMS

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Currently amended) A transmit line driver adapted to drive a signal over a transmit line, the transmit line driver ~~[[drive]]~~ comprising:

~~[[A]]~~ a digital-to-analog converter (DAC) receiving a digital input and providing ~~[[an]]~~ at least one analog current output; and

conversion circuitry adapted for coupling between the DAC and a transformer of the transmit line, the conversion circuitry adapted to convert the analog current output to a signal to be transmitted over the transmit line via the transformer, wherein the conversion circuitry ~~line driver~~ is reconfigurable such that the transmit driver is capable of operating in ~~between a~~ at least one current mode of operation and ~~[[a]]~~ at least one voltage mode of operation depending on at least one characteristic of the transmit line.

2. (Currently amended) The transmit line driver of claim 1, wherein the at least one current mode of operation includes a first current mode, wherein when the transmit driver is operating in the first current mode, the conversion circuitry is configured to directly connect the at least one analog current output provided by the DAC to the transformer ~~or second current sub-modes of operation.~~

3. (Currently amended) The transmit line driver of claim 2, wherein the at least one current mode includes a second current mode and the at least one analog current output includes a first current output and a second current output, and wherein the conversion circuitry comprises a first current mirror and a second current mirror, and wherein when the transmit driver is operating in the second current mode, the conversion circuitry is configured to connect the first current output provided by the DAC as an input to the first current mirror and the second current output provided by the DAC as an input to the second current mirror, and to connect an output of the first current mirror and an output of the second current mirror to the transformer ~~provides a current output.~~

4. (Currently amended) The transmit line driver of claim 3, wherein the first current mirror and the second current mirror provide a programmable gain to the first current output and the second current output, respectively ~~is used to drive the line directly.~~

5. (Currently amended) The transmit line driver of claim 2 ~~[[3]]~~, ~~further comprising~~ wherein the at least one current mode includes a second current mode, and wherein the conversion circuitry comprises [[a]] at least one current mirror coupled between the DAC and the transformer, and wherein when the transmit line driver is operating in the second current mode, the conversion circuitry is configured to connect the at least one analog current output provide by the DAC to the at least one current mirror line that mirrors the current output of the DAC.

6. (Currently amended) The transmit line driver of claim 5, wherein the at least one current mirror adds gain to the at least one current output of the DAC.

7. (Currently amended) The transmit line driver of claim 6, wherein the gain of the at least one current mirror is programmable.

8. (Currently amended) The transmit line driver of claim 5 ~~[[1]]~~, wherein the at least one current mirror comprises a first transistor and a second transistor adapted to be connected between the DAC and the transformer of the transmit line driver includes full-scale current which is programmable.

9. (Currently amended) The transmit line driver of claim 3 ~~[[1]]~~, wherein the first current mirror comprises a first transistor and a second transistor and the second current mirror comprises a third transistor and a fourth transistor ~~driver includes a quiescent current which is programmable.~~

10. (Currently amended) The transmit line driver of claim 1, ~~further including~~ wherein the conversion circuit comprises first and second current mirrors, first and second resistors, first and second bipolar transistors, coupled between the DAC and the transformer [[line]], and wherein when the line driver operates in the at least one voltage mode, the conversion circuit connects at

least one of the first and second bipolar transistors to the transformer of operation.

11. (Currently amended) The transmit line driver of claim 1, wherein the at least one characteristic of the transmit line includes at least one impedance of the transmit line ~~the driver is configured to be placed on a high impedance state.~~

12. (Currently amended) The transmit line driver of claim 2 ~~[[1]]~~, wherein the at least one characteristic of the transmit line includes at least one impedance of the transmit line, and wherein the transmit line driver is configured to operate in the first current mode when an impedance of the transmit line is relatively stable ~~further including first and second current mirrors coupled between the DAC and the line.~~

13. (New) The transmit line driver of claim 12, wherein the transmit line is a cable modem transmit line.

14. (New) The transmit line driver of claim 5, wherein the transmit line driver is configured to operate in the second current mode in circumstances wherein voltage swings in the transmit line are greater than achievable by driving the transmit line in the first current mode.

15. (New) The transmit line driver of claim 14, wherein the at least one characteristic of the transmit line includes at least one impedance of the transmit line, and wherein the transmit line driver is configured to operate in the at least one voltage mode when an impedance of the transmit line varies more than can be accommodated in either the first current mode or the second current mode.

16. (New) The transmit line driver of the claim 14, wherein the transmit line driver is configured to operate in the at least one voltage mode when the transmit line includes a power line.